SEQUENCE LISTING

<110> Darst, Seth
Campbell, Elizabeth
Korzheva, Nataliya
Mustaev, Arkady
Goldfarb, Alex

<120> CRYSTAL OF BACTERIA CORE RNA POLYMERASE WITH RIFAMPICIN

<130> 2555-1-001

<140> UNASSIGNED
<141> 2001-03-09

<160> 4

<170> PatentIn version 3.0

<210> 1
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<212> PRT
<213> Thermus aquaticus

<220>
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<222> (1247)..(1247)
<223> Any amino acid can be placed at this position.

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Met Lys Lys Glu Val Arg Lys Val Arg Ile Ala Leu Ala Ser Pro Glu
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Lys Ile Arg Ser Trp Ser Tyr Gly Glu Val Glu Lys Pro Glu Thr Ile
            20                  25                  30

Asn Tyr Arg Thr Leu Lys Pro Glu Arg Asp Gly Leu Phe Asp Glu Arg
        35                  40                  45

Ile Phe Gly Pro Ile Lys Asp Tyr Glu Cys Ala Cys Gly Lys Tyr Lys
    50                  55                  60

Arg Gln Arg Phe Glu Gly Lys Val Cys Glu Arg Cys Gly Val Glu Val
65                  70                  75                  80

Thr Arg Ser Ile Val Arg Arg Tyr Arg Met Gly His Ile Glu Leu Ala
                85                  90                  95

Thr Pro Ala Ala His Ile Trp Phe Val Lys Asp Val Pro Ser Lys Ile
            100                 105                 110

Gly Thr Leu Leu Asp Leu Phe Ala Thr Glu Leu Glu Gln Val Leu Tyr
        115                 120                 125

Phe Asn Lys Tyr Ile Val Leu Asp Pro Lys Gly Ala Val Leu Asp Gly
    130                 135                 140

Val Pro Val Glu Lys Arg Gln Leu Leu Thr Asp Glu Glu Tyr Arg Glu
145                 150                 155                 160

Leu Arg Tyr Gly Lys Gln Glu Thr Tyr Pro Leu Pro Ala Gly Val Asp
                165                 170                 175

Ala Leu Val Lys Asp Gly Glu Glu Val Val Lys Gly Gln Glu Leu Ala
            180                 185                 190

Pro Gly Val Val Ser Arg Met Asp Gly Val Gly Ser Leu Pro Leu Pro
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        195                 200                 205

Arg Arg Val Arg Val Asp Tyr Leu Arg Lys Glu Arg Ala Ala Leu Arg
    210                 215                 220

Ile Pro Leu Ser Ala Trp Val Glu Lys Glu Pro Tyr Arg Pro Gly Glu
225                 230                 235                 240

Val Leu Ala Glu Leu Ser Glu Pro Tyr Leu Phe Arg Ala Glu Glu Ser
                245                 250                 255

Gly Val Val Glu Leu Lys Asp Leu Ala Glu Gly His Leu Ile Tyr Leu
            260                 265                 270

Arg Gln Glu Glu Glu Val Val Ala Arg Tyr Phe Leu Pro Ala Gly Met
        275                 280                 285

Thr Pro Leu Val Val Glu Gly Glu Ile Val Glu Val Gly Gln Pro Leu
    290                 295                 300

Ala Glu Gly Lys Gly Leu Leu Arg Leu Pro Arg His Met Thr Ala Lys
305                 310                 315                 320

Glu Val Glu Ala Glu Glu Glu Gly Asp Ser Val His Leu Thr Leu Phe
                325                 330                 335

Leu Glu Trp Thr Glu Pro Lys Asp Tyr Lys Val Ala Pro His Met Asn
            340                 345                 350

Val Ile Val Pro Glu Gly Ala Lys Val Gln Ala Gly Glu Lys Ile Val
        355                 360                 365

Ala Ala Ile Asp Pro Glu Glu Glu Val Ile Ala Gln Ala Glu Gly Val
    370                 375                 380

Val His Leu His Glu Pro Ala Ser Ile Leu Val Val Lys Ala Arg Val
385                 390                 395                 400

Tyr Pro Phe Glu Asp Asp Val Glu Val Thr Thr Gly Asp Arg Val Ala
                405                 410                 415

Pro Gly Asp Val Leu Ala Asp Gly Gly Lys Val Lys Ser Glu Ile Tyr
            420                 425                 430

Gly Arg Val Glu Val Asp Leu Val Arg Asn Val Val Arg Val Val Glu
        435                 440                 445

Ser Tyr Asp Ile Asp Ala Arg Met Gly Ala Glu Ala Ile Gln Glu Leu
    450                 455                 460

Leu Lys Glu Leu Asp Leu Glu Lys Leu Glu Arg Glu Leu Leu Glu Glu
465                 470                 475                 480

Met Lys His Pro Ser Arg Ala Arg Arg Ala Lys Ala Arg Lys Arg Leu
                485                 490                 495

Glu Val Val Arg Ala Phe Leu Asp Ser Gly Asn Arg Pro Glu Trp Met
            500                 505                 510

Ile Leu Glu Ala Val Pro Val Leu Pro Pro Asp Leu Arg Pro Met Val
        515                 520                 525

Gln Val Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu Asn Asp Leu Tyr
    530                 535                 540

Arg Arg Leu Ile Asn Arg Asn Asn Arg Leu Lys Lys Leu Leu Ala Gln
545                 550                 555                 560

Gly Ala Pro Glu Ile Ile Ile Arg Asn Glu Lys Arg Met Leu Gln Glu
```

565 570 575

Ala Val Asp Ala Val Ile Asp Asn Gly Arg Arg Gly Ser Pro Val Thr
580 585 590

Asn Pro Gly Ser Glu Arg Pro Leu Arg Ser Leu Thr Asp Ile Leu Ser
595 600 605

Gly Lys Gln Gly Arg Phe Arg Gln Asn Leu Leu Gly Lys Arg Val Asp
610 615 620

Tyr Ser Gly Arg Ser Val Ile Val Val Gly Pro Gln Leu Lys Leu His
625 630 635 640

Gln Cys Gly Leu Pro Lys Arg Met Ala Leu Glu Leu Phe Lys Pro Phe
645 650 655

Leu Leu Lys Lys Met Glu Glu Lys Ala Phe Ala Pro Asn Val Lys Ala
660 665 670

Ala Arg Arg Met Leu Glu Arg Gln Arg Asp Ile Lys Asp Glu Val Trp
675 680 685

Asp Ala Leu Glu Glu Val Ile His Gly Lys Val Val Leu Leu Asn Arg
690 695 700

Ala Pro Thr Leu His Arg Leu Gly Ile Gln Ala Phe Gln Pro Val Leu
705 710 715 720

Val Glu Gly Gln Ser Ile Gln Leu His Pro Leu Val Cys Glu Ala Phe
725 730 735

Asn Ala Asp Phe Asp Gly Asp Gln Met Ala Val His Val Pro Leu Ser
740 745 750

Ser Phe Ala Gln Ala Glu Ala Arg Ile Gln Met Leu Ser Ala His Asn
755 760 765

Leu Leu Ser Pro Ala Ser Gly Glu Pro Leu Ala Lys Pro Ser Arg Asp
770 775 780

Ile Ile Leu Gly Leu Tyr Tyr Ile Thr Gln Val Arg Lys Glu Lys Lys
785 790 795 800

Gly Ala Gly Met Ala Phe Ala Thr Pro Glu Glu Ala Leu Ala Ala Tyr
805 810 815

Glu Arg Gly Glu Val Ala Leu Asn Ala Pro Ile Val Val Ala Gly Arg
820 825 830

Glu Thr Ser Val Gly Arg Leu Lys Phe Val Phe Ala Asn Pro Asp Glu
835 840 845

Ala Leu Leu Ala Val Ala His Gly Leu Leu Asp Leu Gln Asp Val Val
850 855 860

Thr Val Arg Tyr Leu Gly Arg Arg Leu Glu Thr Asn Pro Gly Arg Ile
865 870 875 880

Leu Phe Ala Arg Ile Val Gly Glu Ala Val Gly Asp Glu Lys Val Ala
885 890 895

Gln Glu Leu Ile Gln Met Asp Val Pro Gln Glu Lys Asn Ser Leu Lys
900 905 910

Asp Leu Val Tyr Gln Ala Phe Leu Arg Leu Gly Met Glu Lys Thr Ala
915 920 925

Arg Leu Leu Asp Ala Leu Lys Tyr Tyr Gly Phe Thr Leu Ser Thr Thr

930 935 940

Ser Gly Ile Ile Thr Ile Gly Ile Asp Asp Ala Val Ile Pro Glu Glu
945 950 955 960

Lys Gln Arg Tyr Leu Glu Glu Ala Asp Arg Lys Leu Arg Gln Ile Glu
965 970 975

Gln Ala Tyr Glu Met Gly Phe Leu Thr Asp Arg Glu Arg Tyr Asp Gln
980 985 990

Val Ile Gln Leu Trp Thr Glu Thr Thr Glu Lys Val Thr Gln Ala Val
995 1000 1005

Phe Asn Asn Phe Glu Glu Asn Tyr Pro Phe Asn Pro Leu Tyr Val
1010 1015 1020

Met Ala Gln Ser Gly Ala Arg Gly Asn Pro Gln Gln Ile Arg Gln
1025 1030 1035

Leu Cys Gly Met Arg Gly Leu Met Gln Lys Pro Ser Gly Glu Thr
1040 1045 1050

Phe Glu Val Pro Val Arg Ser Ser Phe Arg Glu Gly Leu Thr Val
1055 1060 1065

Leu Glu Tyr Phe Ile Ser Ser His Gly Ala Arg Lys Gly Gly Ala
1070 1075 1080

Asp Thr Ala Leu Arg Thr Ala Asp Ser Gly Tyr Leu Thr Arg Lys
1085 1090 1095

Leu Val Asp Val Ala His Glu Ile Val Val Arg Glu Ala Asp Cys
1100 1105 1110

Gly Thr Thr Lys Tyr Ile Ser Val Pro Leu Phe Gln Met Asp Glu
1115 1120 1125

Val Thr Arg Thr Leu Arg Leu Arg Lys Arg Ser Asp Ile Glu Ser
1130 1135 1140

Gly Leu Tyr Gly Arg Val Leu Ala Arg Glu Val Glu Ala Leu Gly
1145 1150 1155

Arg Arg Leu Glu Glu Gly Arg Tyr Leu Ser Leu Glu Asp Val His
1160 1165 1170

Phe Leu Ile Lys Ala Ala Glu Ala Gly Glu Val Arg Glu Val Pro
1175 1180 1185

Val Arg Ser Pro Leu Thr Cys Gln Thr Arg Tyr Gly Val Cys Gln
1190 1195 1200

Lys Cys Tyr Gly Tyr Asp Leu Ser Met Ala Arg Pro Val Ser Ile
1205 1210 1215

Gly Glu Ala Val Gly Val Val Ala Ala Glu Ser Ile Gly Glu Pro
1220 1225 1230

Gly Thr Gln Leu Thr Met Arg Thr Phe His Thr Gly Gly Xaa Ala
1235 1240 1245

Val Gly Thr Asp Ile Thr Gln Gly Leu Pro Arg Val Ile Glu Leu
1250 1255 1260

Phe Glu Ala Arg Arg Pro Lys Ala Lys Ala Val Ile Ser Glu Ile
1265 1270 1275

Asp Gly Val Val Arg Ile Glu Glu Gly Glu Asp Arg Leu Ser Val

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    1280                1285                1290

Phe Val  Glu Ser Glu Gly Phe  Ser Lys Glu Tyr Lys  Leu Pro Lys
    1295                1300                1305

Asp Ala  Arg Leu Leu Val Lys  Asp Gly Asp Tyr Val  Glu Ala Gly
    1310                1315                1320

Gln Pro  Leu Thr Arg Gly Ala  Ile Asp Pro His Gln  Leu Leu Glu
    1325                1330                1335

Ala Lys  Gly Pro Glu Ala Val  Glu Arg Tyr Leu Val  Asp Glu Ile
    1340                1345                1350

Gln Lys  Val Tyr Arg Ala Gln  Gly Val Lys Leu His  Asp Lys His
    1355                1360                1365

Ile Glu  Ile Val Val Arg Gln  Met Leu Lys Tyr Val  Glu Val Thr
    1370                1375                1380

Asp Pro  Gly Asp Ser Pro Leu  Leu Glu Gly Gln Val  Leu Glu Lys
    1385                1390                1395

Trp Asp  Val Glu Ala Leu Asn  Glu Arg Leu Ile Ala  Glu Gly Lys
    1400                1405                1410

Val Pro  Val Ala Trp Lys Pro  Leu Leu Met Gly Val  Thr Lys Ser
    1415                1420                1425

Ala Leu  Ser Thr Lys Ser Trp  Leu Ser Ala Ala Ser  Phe Gln Asn
    1430                1435                1440

Thr Thr  His Val Leu Thr Glu  Ala Ala Ile Ala Gly  Lys Lys Asp
    1445                1450                1455

Glu Leu  Ile Gly Leu Lys Glu  Asn Val Ile Leu Gly  Arg Leu Ile
    1460                1465                1470

Pro Ala  Gly Thr Gly Ser Asp  Phe Val Arg Phe Thr  Gln Val Val
    1475                1480                1485

Asp Gln  Arg Thr Leu Lys Ala  Ile Glu Glu Ala Arg  Lys Glu Ala
    1490                1495                1500

Val Glu  Ala Lys Glu Lys Glu  Ala Pro Arg Arg Pro  Val Arg Arg
    1505                1510                1515

Glu Gln  Pro Gly Lys Gly Leu
    1520                1525

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<211>  1119
<212>  PRT
<213>  Thermus aquaticus

<220>
<221>  X
<222>  (695)..(696)
<223>  Any amino acid can be at either position.


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Met Lys Ile Lys Arg Phe Gly Arg Ile Arg Glu Val Ile Pro Leu Pro
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Pro Leu Thr Glu Ile Gln Val Glu Ser Tyr Lys Lys Ala Leu Gln Ala
            20                  25                  30
```

```
Asp Val Pro Pro Glu Lys Arg Glu Asn Val Gly Ile Gln Ala Ala Phe
        35                  40                  45

Lys Glu Thr Phe Pro Ile Glu Glu Gly Asp Lys Gly Lys Gly Gly Leu
    50                  55                  60

Val Leu Asp Phe Leu Glu Tyr Arg Ile Gly Asp Pro Pro Phe Ser Gln
65                  70                  75                  80

Asp Glu Cys Arg Glu Lys Asp Leu Thr Tyr Gln Ala Pro Leu Tyr Ala
                85                  90                  95

Arg Leu Gln Leu Ile His Lys Asp Thr Gly Leu Ile Lys Glu Asp Glu
            100                 105                 110

Val Phe Leu Gly His Leu Pro Leu Met Thr Glu Asp Gly Ser Phe Ile
        115                 120                 125

Ile Asn Gly Ala Asp Arg Val Ile Val Ser Gln Ile His Arg Ser Pro
    130                 135                 140

Gly Val Tyr Phe Thr Pro Asp Pro Ala Arg Pro Gly Arg Tyr Ile Ala
145                 150                 155                 160

Ser Ile Ile Pro Leu Pro Lys Arg Gly Pro Trp Ile Asp Leu Glu Val
                165                 170                 175

Glu Ala Ser Gly Val Val Thr Met Lys Val Asn Lys Arg Lys Phe Pro
            180                 185                 190

Leu Val Leu Leu Leu Arg Val Leu Gly Tyr Asp Gln Glu Thr Leu Val
        195                 200                 205

Arg Glu Leu Ser Ala Tyr Gly Asp Leu Val Gln Gly Leu Leu Asp Glu
    210                 215                 220

Ala Val Leu Ala Met Arg Pro Glu Glu Ala Met Val Arg Leu Phe Thr
225                 230                 235                 240

Leu Leu Arg Pro Gly Asp Pro Pro Lys Lys Asp Lys Ala Leu Ala Tyr
                245                 250                 255

Leu Phe Gly Leu Leu Ala Asp Pro Lys Arg Tyr Asp Leu Gly Glu Ala
            260                 265                 270

Gly Arg Tyr Lys Ala Glu Glu Lys Leu Gly Val Gly Leu Ser Gly Arg
        275                 280                 285

Thr Leu Val Arg Phe Glu Asp Gly Glu Phe Lys Asp Glu Val Phe Leu
    290                 295                 300

Pro Thr Leu Arg Tyr Leu Phe Ala Leu Thr Ala Gly Val Pro Gly His
305                 310                 315                 320

Glu Val Asp Asp Ile Asp His Leu Gly Asn Arg Arg Ile Arg Thr Val
                325                 330                 335

Gly Glu Leu Met Ala Asp Gln Phe Arg Val Gly Leu Ala Arg Leu Ala
            340                 345                 350

Arg Gly Val Arg Glu Arg Met Val Met Gly Ser Pro Asp Thr Leu Thr
        355                 360                 365

Pro Ala Lys Leu Val Asn Ser Arg Pro Leu Glu Ala Ala Leu Arg Glu
    370                 375                 380

Phe Phe Ser Arg Ser Gln Leu Ser Gln Phe Lys Asp Glu Thr Asn Pro
385                 390                 395                 400
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```
Leu Ser Ser Leu Arg His Lys Arg Arg Ile Ser Ala Leu Gly Pro Gly
                405                 410                 415

Gly Leu Thr Arg Glu Arg Ala Gly Phe Asp Val Arg Asp Val His Arg
            420                 425                 430

Thr His Tyr Gly Arg Ile Cys Pro Val Glu Thr Pro Glu Gly Ala Asn
        435                 440                 445

Ile Gly Leu Ile Thr Ser Leu Ala Ala Tyr Ala Arg Val Asp Ala Leu
    450                 455                 460

Gly Phe Ile Arg Thr Pro Tyr Arg Arg Val Lys Asn Gly Val Val Thr
465                 470                 475                 480

Glu Glu Val Val Tyr Met Thr Ala Ser Glu Glu Asp Arg Tyr Thr Ile
                485                 490                 495

Ala Gln Ala Asn Thr Pro Leu Glu Gly Asp Arg Ile Ala Thr Asp Arg
            500                 505                 510

Val Val Ala Arg Arg Arg Gly Glu Pro Val Ile Val Ala Pro Glu Glu
        515                 520                 525

Val Glu Phe Met Asp Val Ser Pro Lys Gln Val Phe Ser Leu Asn Thr
    530                 535                 540

Asn Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala Leu Met
545                 550                 555                 560

Gly Ser Asn Met Gln Thr Gln Ala Val Pro Leu Ile Arg Ala Gln Ala
                565                 570                 575

Pro Val Val Met Thr Gly Leu Glu Glu Arg Val Val Arg Asp Ser Leu
            580                 585                 590

Ala Ala Leu Tyr Ala Glu Glu Asp Gly Glu Val Val Lys Val Asp Gly
        595                 600                 605

Thr Arg Ile Ala Val Arg Tyr Glu Asp Gly Arg Leu Val Glu His Pro
    610                 615                 620

Leu Arg Arg Tyr Ala Arg Ser Asn Gln Gly Thr Ala Phe Asp Gln Arg
625                 630                 635                 640

Pro Arg Val Arg Val Gly Gln Arg Val Lys Lys Gly Asp Leu Leu Ala
                645                 650                 655

Asp Gly Pro Ala Ser Glu Glu Gly Phe Leu Ala Leu Gly Gln Asn Val
            660                 665                 670

Leu Val Ala Ile Met Pro Phe Asp Gly Tyr Asn Phe Glu Asp Ala Ile
        675                 680                 685

Val Ile Ser Glu Glu Leu Xaa Xaa Arg Asp Phe Tyr Thr Ser Ile His
    690                 695                 700

Ile Glu Arg Tyr Glu Ile Glu Ala Arg Asp Thr Lys Leu Gly Pro Glu
705                 710                 715                 720

Arg Ile Thr Arg Asp Ile Pro His Leu Ser Glu Ala Ala Leu Arg Asp
                725                 730                 735

Leu Asp Glu Glu Gly Ile Val Arg Ile Gly Ala Glu Val Lys Pro Gly
            740                 745                 750

Asp Ile Leu Val Gly Arg Thr Ser Phe Lys Gly Glu Gln Glu Pro Ser
        755                 760                 765
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```
Pro Glu Glu Arg Leu Leu Arg Ser Ile Phe Gly Glu Lys Ala Arg Asp
    770                 775                 780

Val Lys Asp Thr Ser Leu Arg Val Pro Pro Gly Glu Gly Gly Ile Val
785                 790                 795                 800

Val Gly Arg Leu Arg Leu Arg Arg Gly Asp Pro Gly Val Glu Leu Lys
                805                 810                 815

Pro Gly Val Arg Glu Val Val Arg Val Phe Val Ala Gln Lys Arg Lys
            820                 825                 830

Leu Gln Val Gly Asp Lys Leu Ala Asn Arg His Gly Asn Lys Gly Val
        835                 840                 845

Val Ala Lys Ile Leu Pro Val Glu Asp Met Pro His Leu Pro Asp Gly
    850                 855                 860

Thr Pro Val Asp Val Ile Leu Asn Pro Leu Gly Val Pro Ser Arg Met
865                 870                 875                 880

Asn Leu Gly Gln Ile Leu Glu Thr His Leu Gly Leu Ala Gly Tyr Phe
                885                 890                 895

Leu Gly Gln Arg Tyr Ile Ser Pro Val Phe Asp Gly Ala Thr Glu Pro
            900                 905                 910

Glu Ile Lys Glu Leu Leu Ala Glu Ala Phe Asn Leu Tyr Phe Gly Lys
        915                 920                 925

Arg Gln Gly Glu Gly Phe Gly Val Asp Lys Arg Glu Lys Glu Val Leu
    930                 935                 940

Ala Arg Ala Glu Lys Leu Gly Leu Val Ser Pro Gly Lys Ser Pro Glu
945                 950                 955                 960

Glu Gln Leu Lys Glu Leu Phe Asp Leu Gly Lys Val Val Leu Tyr Asp
                965                 970                 975

Gly Arg Thr Gly Glu Pro Phe Glu Gly Pro Ile Val Val Gly Gln Met
            980                 985                 990

Phe Ile Met Lys Leu Tyr His Met  Val Glu Asp Lys Met  His Ala Arg
        995                 1000                1005

Ser Thr  Gly Pro Tyr Ser Leu  Ile Thr Gln Gln Pro  Leu Gly Gly
    1010                1015                1020

Lys Ala  Gln Phe Gly Gly Gln  Arg Phe Gly Glu Met  Glu Val Trp
    1025                1030                1035

Ala Leu  Glu Ala Tyr Gly Ala  Ala His Thr Leu Gln  Glu Met Leu
    1040                1045                1050

Thr Ile  Lys Ser Asp Asp Ile  Glu Gly Arg Asn Ala  Ala Tyr Gln
    1055                1060                1065

Ala Ile  Ile Lys Gly Glu Asp  Val Pro Glu Pro Ser  Val Pro Glu
    1070                1075                1080

Ser Phe  Arg Val Leu Val Lys  Glu Leu Gln Ala Leu  Ala Leu Asp
    1085                1090                1095

Val Gln  Thr Leu Asp Glu Lys  Asp Asn Pro Val Asp  Ile Phe Glu
    1100                1105                1110

Gly Leu  Ala Ser Lys Arg
    1115
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<212> PRT
<213> Thermus aquaticus

<400> 3

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Met Leu Glu Ser Lys Leu Lys Ala Pro Val Phe Thr Ala Thr Thr Gln
1               5                  10                  15

Gly Asp His Tyr Gly Glu Phe Val Leu Glu Pro Leu Glu Arg Gly Phe
            20                  25                  30

Gly Val Thr Leu Gly Asn Pro Leu Arg Arg Ile Leu Leu Ser Ser Ile
        35                  40                  45

Pro Gly Thr Ala Val Thr Ser Val Tyr Ile Glu Asp Val Leu His Glu
    50                  55                  60

Phe Ser Thr Ile Pro Gly Val Lys Glu Asp Val Val Glu Ile Ile Leu
65                  70                  75                  80

Asn Leu Lys Glu Leu Val Val Arg Phe Leu Asp Pro Arg Trp Arg Thr
                85                  90                  95

Thr Leu Ile Leu Arg Ala Glu Gly Pro Lys Glu Val Arg Ala Val Asp
            100                 105                 110

Phe Thr Pro Ser Ala Asp Val Glu Ile Met Asn Pro Asp Leu His Ile
        115                 120                 125

Ala Thr Leu Glu Glu Gly Gly Lys Leu Tyr Met Glu Val Arg Val Asp
    130                 135                 140

Arg Gly Val Gly Tyr Val Pro Ala Glu Arg His Gly Ile Lys Asp Arg
145                 150                 155                 160

Ile Asn Ala Ile Pro Val Asp Ala Ile Phe Ser Pro Val Arg Arg Val
                165                 170                 175

Ala Phe Gln Val Glu Asp Thr Arg Leu Gly Gln Arg Thr Asp Leu Asp
            180                 185                 190

Lys Leu Thr Leu Arg Ile Trp Thr Asp Gly Ser Val Thr Pro Leu Glu
        195                 200                 205

Ala Leu Asn Gln Ala Val Ala Ile Leu Lys Glu His Leu Asn Tyr Phe
    210                 215                 220

Ala Asn Pro Glu Ala Ser Leu Leu Pro Thr Pro Glu Val Ser Lys Gly
225                 230                 235                 240

Glu Lys Arg Glu Ser Ala Glu Glu Asp Leu Asp Leu Pro Leu Glu Glu
                245                 250                 255

Leu Gly Leu Ser Thr Arg Val Leu His Ser Leu Lys Glu Glu Gly Ile
            260                 265                 270

Glu Ser Val Arg Ala Leu Leu Ala Leu Asn Leu Lys Asp Leu Arg Asn
        275                 280                 285

Ile Pro Gly Ile Gly Glu Arg Ser Leu Glu Glu Ile Arg Gln Ala Leu
    290                 295                 300

Ala Lys Lys Gly Phe Thr Leu Lys Glu
305                 310
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<210> 4
<211> 99

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<212>  PRT
<213>  Thermus aquaticus

<400>  4

Met Ala Glu Pro Gly Ile Asp Lys Leu Phe Gly Met Val Asp Ser Lys
1               5                   10                  15

Tyr Arg Leu Thr Val Val Val Ala Lys Arg Ala Gln Gln Leu Leu Arg
            20                  25                  30

His Arg Phe Lys Asn Thr Val Leu Glu Pro Glu Glu Arg Pro Lys Met
        35                  40                  45

Arg Thr Leu Glu Gly Leu Tyr Asp Asp Pro Asn Ala Val Thr Trp Ala
    50                  55                  60

Met Lys Glu Leu Leu Thr Gly Arg Leu Phe Phe Gly Glu Asn Leu Val
65                  70                  75                  80

Pro Glu Asp Arg Leu Gln Lys Glu Met Glu Arg Leu Tyr Pro Thr Glu
                85                  90                  95

Glu Glu Ala
```